Version Description Document
for the
DII Volume Manager Segment
(for SUN SPARCstorage Arrays)
Version 3.0.0.5/2.3

I. Introduction:

The primary purpose of the DII Volume Manager segment is to automatically install the SUN Volume Manager software that is required to use the SUN SPARCstorage Arrays. Any firmware upgrades, to the Fiber Channel Optical Modules and the SPARCstorage Array controllers, and required Solaris patches are also installed. The segment will automatically configure any number of SPARCstorage arrays that are connect to a SUN system, or will allow the installer to configure them manually, either via the segment or after the installation of the segment. Disk initialization and volume creation are also accomplished during the installation of the segment.

II. Requirements:

A Solaris 2.5.1 system with the appropriate DII kernel installed is required. The Volume Manager segment will not install if at least one SPARCstorage array is not connected and recognized by the SUN platform. In addition the Volume Manager segment will abort the install if NIS+ is running on the system. The reason for this is that some Volume Manager related Solaris patches will not install when NIS+ is up. Since the software packages and patch provided with this segment are GNU compressed the DII GNU Zip Compression Utility segment is required. The segment also insures that /opt, which is actually located in "/h/COTS/UNIX/opt" in the DII kernel has sufficient disk space to hold the Volume Manager software packages. At least 30 megabytes of disk space are required to hold the required Volume Manager software packages, 40 megabytes if the Volume Manager AnswerBook is loaded.

III. Software Description:

The Volume Manager segment installs the following four software packages:

SUNWassa Using the SPARCstorage Array 2.3 AnswerBook
SUNWvmman SPARCstorage Volume Manager (manual pages)
SUNWvxvm SPARCstorage Volume Manager

SUNWvxva SPARCstorage Volume Manager Visual Administrator

In addition to the above packages the following Solaris patch are loaded:

103766-02 Jumbo Patch for SSA for Solaris 2.5.1

Finally, the firmware on the Fiber Channel Optical Modules is upgraded to version 1.33 and the firmware on the SPARCstorage array controllers is upgraded to version 3.9.

Following the installation of the software/firmware the segment identifies all SPARCstorage arrays attached to the system, as well as the number of drives and the size of the drives in each. (The size of the first drive in the SPARCstorage array is used to determine the size, mixing of different size drives in a SPARCstorage array is not supportted.). The SPARCstorage array controllers and the disk drives on each are presented to the installer, to enable them to determine if all the disk drives are operational. The segment sorts the SPARCstorage arrays first by the number of disk (largest number first) and then by the size of the drives (largest first). Using this information the Volume Manager has a set of predetermined configurations that will be used to configure the SPARCstorage Arrays. The configuration options are presented in Section IV. The installer also has the option of configuring the SPARCstorage arrays manually, via the segment or not at all. If the installer elects to configure the segment manually, they will be asked to identify the number of disk drives for the volume, the mount point of the volume, and whether the volume should stripped.

All non-array disk drives are placed in the /etc/vx/disks.exclude file which prevents the Volume Manager from initializing and thereby destroying the data on them.

After the segment has identified all SPARCstorage array disk drives and created the appropriate configuration files the installer will be asked if they wish to recover previously configured SPARCstorage arrays. If the installer answers yes the segment will recover the SPARCstorage arrays and exit. Otherwise, the segment will initialize all SPARCstorage array disk drives and launch the volume creation script.

IV. Segment Provided Volume Configurations

Tables 1 through 4 identify how the first SPARCstorage array will be configured on a system. If there are several SPARCstorage arrays attached to a system the first will the one with the largest number of disk drives and then the largest sized disk drives. Each additional SPARCstorage array will be configured as shown in table 5 with the mount points being incremented accordingly. To use the automatic configuration option the SPARCstorage array must have 16, 18, 24, or 30 disk drives in it. All drives in a SPARCstorage array must be the same size (1.05GB, 2.1GB, or 4.2GB). The following guidelines are used in defining these tables:

1. The first volume on the first SPARCstorage array is mount as /home20, with each subsequent volume being mounted as /home21, /home22, /home23 and so forth. Mount points /home1 through /home19 are reserved for non-SPARCstorage array disk drives.

2. If two SPARCstorage arrays have the same number and size of disk drives one SPARCstorage array will be used to mirror the other. In this case the last volume will lose a drive for providing one drive on each SPARCstorage array for hot-relocation.

Table 1.

SPARCstorage Array with 30 Disk Drives (1.05 ir 2.1 GB)	
Number of Drives	Mount Point
6	/home20
6	/home21
6	/home22
6	/home23
3	/home24
3	/home25
If this SPARCstorage Array is mirrored a drive will be removed from the /home25 volume for use as a hot-relocation drive.	

Table 2.

SPARCstorage Array with 18 Disk Drives (1.05 or 2.1GB)	
Number of Drives	Mount Point
6	/home20
6	/home21
3	/home22
3	/home23
If this SPARCstorage Array is mirrored a drive will be removed from the /home23 volume for use as a hot-relocation drive.	

Table 3

SPARCstorage Array with 16 Disk Drives (1.05 or 2.1 GB)	
Number of Drives	Mount Point
6	/home20
6	/home21
3	/home22
3	/home23
If this SPARCstorage Array is mirrored a drive will be removed from the /home23 volume for use as a hot-relocation drive.	

Table 4

SPARCstorage Array with 24 Disk Drives (1.05 or 2.1 GB)	
Number of Drives	Mount Point
6	/home20
6	/home21
6	/home22
3	/home23
3	/home24
If this SPARCstorage Array is mirrored a drive will be removed from the /home24 volume for use as a hot-relocation drive.	

Table 5

Additional SPARCstorage Arrays (Number of total disk drives specified in parenthesis)	
Number of Drives	Mount Point
6	/home(##)
6	/home(##)
6 (18)	/home(##)
6 (24)	/home(##)
6 (30)	/home(##)
If this SPARCstorage Array is mirrored a drive will be removed from the last volume for use as a hot-relocation drive.	
## The mount points are incremented to the next available /home__.	

V. Waviers Granted By DII Engineering

The following waivers were granted by DII Engineering for the Volume Manager segment:

1. Software Requirements Specifications: not required.
2. Operator's Manual: requirement satisfied by SUN's SPARCstorage Array User's Guide (Revision A, September 1996).
3. System Administrator's Manual: requirement satisfied by SUN's SPARCstorage Array User's Guide (Revision A, September 1996).
4. Software User's Manual: requirement satisfied by SUN's SPARCstorage Array User's Guide (Revision A, September 1996).